



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/066,274	01/31/2002	Itzhak Bergel	884.645US1	4423
7590	09/19/2005		EXAMINER	
Schwegman, Lundberg, Woessner & Kluth, P.A. P.O. Box 2938 Minneapolis, MN 55402			CHANG, EDITH M	
			ART UNIT	PAPER NUMBER
			2637	

DATE MAILED: 09/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/066,274	BERGEL, ITZHAK	
	<b>Examiner</b>	<b>Art Unit</b>	
	Edith M. Chang	2637	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 13 July 2005.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 6 and 14-29 is/are rejected.
- 7) Claim(s) 1-5, 7-13 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|  | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Drawings*

1. The drawings were received on July 13, 2005. These drawings are accepted.

### *Claim Objections*

2. Claims 1-29 are objected to because of the following informalities:

Claim 1, line 8; Claim 3, line 4; Claim 13, line 2; Claim 14, lines 5-6 & Claim 15, line 5: "measurement and transition probabilities" should be "measurement probability and the transition probability".

Claim 4, lines 1-2 & Claim 12, line 1: "weight-sets" should be "the initial weight-set and the final weight-set".

Claims 6 & 7, line 1: "wherein determining" should be "wherein the determining".

Claims 7 & 17, line 4: "a continuous pilot channel (CPICH)" should be "a continuous pilot channel (CPICH) of the current time-slot".

Claim 13, line 3: "a next final " should be "the final"; line 4: "from the current time-slot as a prior time-slot" is suggested changing to "from the current time-slot as a prior time-slot in the next time-slot".

Claim 19, lines 8-9; Claim 20, line 5: "the measurement and transition probabilities" should be "the measurement probability and the transition probability".

Claim 22, lines 4-5: "a continuous pilot channel (CPICH)" should be "a continuous pilot channel (CPICH) of the current time-slot".

Claim 24, line 8: "the metrics for the weight-sets" is suggested changing to "the metrics for weight-sets" to avoid the ambiguous from the weight-sets of the predetermined weight-sets recited in lines 7-8.

Claims 2, 5, 8-11, 16, 18, 20-21, 23 and 25-29 are directly or indirectly dependent on the objected claims 1, 14, 19 and 24.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 6, 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 6, lines 1-3: "The method of claim 1 wherein the determining the measurement probability includes determining the measurement probability for each weight-set of the group of predetermined weight-sets" does not clearly indicate that how does "the determining the measurement probability for each weight-set" included in "the determining the measurement probability for each weight-set of the group of predetermined weight-sets" relate to "the determining the measurement probability for an initial weight-set from a group of predetermined weight-sets" recited in claim 1 lines 3-4.

Claim 14, line 7: "a weight-set" does not clearly indicate that this "a weight-set" is different or the same as the "a weight-set" recited in the line 2 of claim 14.

Claim 16, lines 1-3: "the metrics calculation element determines the measurement probability by estimating a probability for each weight-set of the group of predetermined weight-sets" is recited, however, the metrics calculation element determines a measurement probability for a weight-set from measurements of a current time-slot only as recited in line 2-3 of claim 14, and the group of predetermined weight-sets is used by the weight detection element to select the weight-set as recited in line 7 of claim 14. It is not clearly indicate that how does the metrics calculation element determine the measurement probability by estimating a probability for each weight-set of the group of predetermined weight-sets.

Claim 17, lines 1-3: "the metrics calculation element determines the probability by estimating a probability for each weight-set of the group of predetermined weight-sets" is recited, however, the metrics calculation element determines a measurement probability for a weight-set from measurements of a current time-slot only as recited in line 2-3 of claim 14, and the group of predetermined weight-sets is used by the weight detection element to select the weight-set recited in line 7 of claim 14. It is not clearly indicate that how does the metrics calculation element determine the measurement probability by estimating a probability for each weight-set of the group of predetermined weight-sets.

Claim 18, lines 1-3: "the metrics calculation element determines the transition probability from a probability that a weight-set was changed from other weight-sets of

Art Unit: 2637

the group of predetermined weight-sets" is recited, however, the metrics calculation element determines a measurement probability for a weight-set from measurements of a current time-slot only as recited in line 2-3 of claim 14, and the group of predetermined weight-sets is used by the weight detection element to select the weight-set recited in line 7 of claim 14. It is not clearly indicate that how does the metrics calculation element determine the transition probability from a probability that a weight-set was changed from other weight-sets of the group of predetermined weight-sets.

Claim 25, line 3: "each weight-set" does not clearly indicate that it is "each weight-set" of the weight-sets recited in line 8 of claim 24 or from other weight-sets; line 4: "the weight-set" lacks antecedent basis that it is the weight-set selected by the weight detection element recited in line 7 of claim 24 or the "each weight-set" recited in line 3 of claim 25.

5. Claims 14-18 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted element is: weight selection.

In claim 14, lines 1-2 recites "a metrics calculation element to determine a measurement probability for a weight-set from measurements of a current time-slot". The measurements of a current time-slot per se can not determine a measurement probability for a weight-set without the appropriate channel weight-sets from a group of predetermined channel weight-sets used by the transmitter provided by the "weight

selection" as disclosed in Fig.1, wherein a group of predetermined weight-sets is provided by the weight selection 114, and stated in page 4, lines 10-15 & lines 28-31.

Hence, there is an essential element, the "weight selection", omitted to clearly point out the invention.

Claims 15-18 are dependent on the rejected claim 14.

6. Claims 19-23 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted step is: determining a group of predetermined weight-sets from measurements of a current time-slot.

In claim 19, lines 3-4: recites "determining a measurement probability for a weight-set from measurements of a current time-slot".

The measurements of a current time-slot per se can not determine a measurement probability for a weight-set without the appropriate channel weight-sets from a group of predetermined channel weight-sets used by the transmitter provided by the "weight selection" (Fig.1 and page 4, lines 10-15 & lines 28-31).

Hence, there is an essential step omitted, the determining a group of predetermined weight-sets from measurements of a current time-slot for the determining a measurement probability for a weight-set, to clearly point out the invention.

Claims 20-23 are dependent on the rejected claim 14.

Art Unit: 2637

7. Claims 24-29 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted element is: weight selection.

In claim 24, lines 4-6: the metrics for weight-set can not be calculated from the measured characteristics of the current time slots from the dedicated channel measurement element only by the metrics calculation element. The metrics for weight-set is calculated from the appropriate channel weight-sets from a group of predetermined channel weight-sets used by the transmitter provided by the "weight selection" as well, as disclosed in Fig.1, wherein a group of predetermined weight-sets is provided by the weight selection 114, and stated in page 4, lines 10-15 & lines 28-31.

Hence, there is an essential element, the "weight selection", omitted to clearly point out the invention.

Claims 25-29 are dependent on the rejected claim 24.

### ***Allowable Subject Matter***

8. Claims 1-5 and 7-13 would be allowable if rewritten to overcome the objections set forth in this Office action.

9. Claims 6 and 14-29 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action, and overcome the objections set forth in this Office action.

10. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record fails to teach or suggest, alone or in a combination, among other things, at least a processor or a CDMA receiver and its method to detect a weight-set to process a spread spectrum channel as a whole, the combination of elements and features, which includes a metric calculation element to determine a measure probability for a weight-set and a transition probability for the weight-set, and to calculate a weight-set metric based on the measurement probability, the transition probability and a prior weight-set metric; and a weight detection element to select a weight-set from a group of predetermined weight-sets based on the weight-set metric. The measure probability is based on measurement of a current time-slot, the transition probability is based at least on a change from a previously requested weight-set as recited in the claims.

### ***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US Patent 6,853,839 B1 by Usuda et al. describes the posterior probabilities and prior probabilities used in the antennas weights.

US Patent 6,831,943 B1 by Dabak et al. describes the channel evaluator to measure the beamformer coefficient from the user station and feed back to the base station.

US Patent 6,754,473 B1 described the adaptive weight selector and weight calculator.

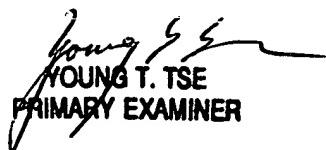
Art Unit: 2637

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edith M. Chang whose telephone number is 571-272-3041. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay K. Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Edith Chang  
September 16, 2005

  
YOUNG T. TSE  
PRIMARY EXAMINER